Storm Water Evaluation Work Plan Operable Unit 3 Swan Island Upland Facility

Port of Portland
Portland, Oregon

October 2008

NEWFIELDS

Ash Creek Associates, Inc.
Environmental and Geotechnical Consultants

619453

Storm Water Evaluation Work Plan Operable Unit 3 Swan Island Upland Facility

Respectfully submitted,

Michael J. Pickering, R.G.
Senior Project Hydrogeologist, Ash Creek Associates

Herbert F. Clough, P.E.
Principal, Ash Creek Associates

NEWFIELDS

Ash Creek Associates, Inc.
Environmental and Geotechnical Consultants

Table of Contents

Figures

Appendices

Definitions

Catch Basin: A structure located just below the ground surface, used to collect storm water runoff for conveyance purposes. Generally located in streets and parking lots, catch basins have grated lids, allowing storm water from the surface to pass through for collection. Catch basins also include a sumped bottom and submerged outlet pipe (downturned 90-degree elbow, hood, or baffle board) to trap coarse sediment and oils.

Inlet: A structure (other than a catch basin) that captures and conveys storm water directly to surface water or the storm sewer system. Examples include scupper drains, dock drains, field inlets, or grated manholes.

Storm Sewer: A sewer designed to carry only storm water and surface water including street flow; excludes domestic wastewater and industrial wastes.

1. Introduction

This Work Plan presents the proposed methodology to complete a storm water characterization for Operable Unit 3 (OU3) at the Swan Island Upland Facility (SIUF; the "Facility") located in Portland, Oregon (Figure 1). The characterization is being conducted in accordance with a request from the Oregon Department of Environmental Quality (DEQ) received in a letter by the Port of Portland (Port) dated July 21, 2008. The purpose of the Storm Water Evaluation is to evaluate whether storm water from the Facility may be a potential source/pathway for future adverse impact to the Willamette River. This work is being performed to support a No Further Action (NFA) determination for the Facility.

The proposed Storm Water Evaluation at the Facility includes the following:

- Step 1 – Characterizing the storm water basin;
  - Defining the storm drain system;
  - Identifying Contaminants of Interest (COI);
- Step 2 – Preparing Work Plan on storm water sampling;
- Step 3 – Conducting Storm Water Evaluation sampling; and
- Step 4 – Reporting.

This Work Plan comprises Steps 1 and 2 of the approach. Steps 3 and 4 will be conducted in the fall/winter of 2008/2009.

1.1 Work Plan Organization

This Work Plan is organized as follows:

- Section 2 describes the Facility and the existing storm drain system, and summarizes Facility operations and available relevant environmental assessment information;
- Section 3 lays out the overall methodology being used to evaluate storm water at the Facility and the proposed scope of sampling activities for this evaluation; and
- Section 4 describes the proposed data evaluation and reporting procedures.

2. Background

This section describes the Facility storm drain system and summarizes existing relevant data.

2.1 Facility Description and Uses

The Facility consists of a 1.7-acre parcel of property located at 5420 North Lagoon Avenue and the adjacent approximately 0.3-acre narrow strip of property that extends to the northeast to the ordinary high water line for Swan Island Lagoon. Figures 1 and 2 show the vicinity and layout of the Facility. The topography of the Facility is relatively flat, with an elevation of approximately 30 feet above mean sea level (MSL). The 1.7-acre parcel includes an office/warehouse building and is almost entirely paved with asphalt-concrete. The adjacent parcel includes an asphalt-concrete roadway that provides vehicle access to Berth 308 and contains no structures (Appendix A; Photograph 1).

2.1.1 Current Facility Uses

The 1.7-acre parcel is currently used by Freightliner LLC (Freightliner) to collect truck performance data for the improvement of future truck designs and operations. Engine research and development, engine assembly, and storage occur at the Facility. The Facility is not currently used as a marine terminal.

A catch basin is present in the Freightliner receiving/storage are adjacent to the main shop area (Figure 3). The catch basin was constructed with the building in 1980. It was connected to the sanitary sewer via an oil/water separator (OWS). The original building tenant reportedly filled the OWS with concrete prior to 1990 to prevent accidental discharge of petroleum or vehicle maintenance fluids to the sanitary sewer (Hahn, 2002). Since then, the catch basin has served as a blind sump. The Freightliner staff indicated that they confirmed the concrete abandonment at the start of their lease. The catch basin was observed to be clean and dry during a September 2008 visit to the Facility.

2.1.2 Historical Facility Uses

Historical Aerial Photograph Review. A historical aerial photograph review was completed by Hahn in 2002 (Hahn, 2002). Following is a summary of the observations made by Hahn supplemented with review of additional historical aerial photographs completed as part of the preparation of this Work Plan.

- *1929 and 1936.* The Facility, along with the adjoining parcels to the north, south, and east of the property, were undeveloped. The central and eastern portions of the property sloped downward to the east, and appeared to be substantially lower in elevation than at present.
- *1940.* The western portion of the Facility appeared to be used for automobile parking.
- *1948.* The eastern portion of the Facility appeared to have been filled to the level of the western portion of the Facility.

- *1955.* No significant changes to the Facility were observed.
- *1963.* The Facility did not appear to be paved at that time. The property was undeveloped with the exception of what appeared to be a small shed on its northeastern portion.
- *1972 and 1976.* The Facility was paved with asphalt-concrete and was used for automobile parking.
- *1980.* The existing office/warehouse building on the Facility had been constructed.
- *1986.* Trucks were parked on the western portion of the Facility.
- *1991.* No significant changes to the Facility were observed.
- *1995.* No significant changes to the Facility were observed.
- *1997.* No significant changes to the Facility were observed.
- *2001.* No significant changes to the Facility were observed except that several storage trailers were located on the southeastern portion of the Facility.

Facility Operations and Tenancy. The building currently present on the Facility (Building 70) was constructed in 1980 for use by Crosby and Overton Marine and Environmental Cleaning, Inc. (Crosby & Overton). Chemical Processors, Inc., a similar company, assumed the lease of the property in October 1989. Chemical Processors, Inc. was purchased by Burlington Environmental, Inc. in January 1992. Foss Environmental purchased Burlington Environmental, Inc. in November 1992, and assumed occupancy of the property at that time (Hahn, 2002).

Throughout the period of successive owners/operators, the office/warehouse building was used to store containment booms, vacuum trucks, pumps, and other environmental incident response equipment on-site. The DEQ indicated in an interoffice memo that Crosby & Overton performed industrial cleaning and disposal for their clients and confirmed that the wastes generated were hauled directly to recycling facilities (DEQ, 1980; Appendix B). Crosby and Overton performed similar services at their OU1 leasehold before moving to OU3 in 1980.

Mr. Darrell Winegar, who worked at the subject property from 1980 through 1987, indicated in an interview with Hahn that several 3,000-gallon steel aboveground storage tanks (ASTs) were stored on the northern portion of the property from approximately 1980 through 1984, and were used to temporarily store oily bilge water from ships (Hahn, 2002). Mr. Winegar indicated that he was unaware of any storage of hazardous materials at the property with the exception of the bilge water tanks and a gasoline underground storage tank (UST). In 1983, the U.S. Environmental Protection Agency (EPA) inspected Crosby & Overton uses of Building 70 and sampled waste oil stored in two portable ASTs at the Facility to test for polychlorinated biphenyls (PCBs; EPA, 1983a). The waste oil samples were below detection limits for PCBs (EPA, 1983b).

During the Foss tenancy, containerized wastes and petroleum-impacted soil were occasionally stored in the asphalt-paved parking and equipment storage area for short durations prior to being shipped off-site (Hahn, 2002).

2.2 Drainage Basin Area and Storm Water System

Figure 3 presents the storm water drainage system at the Facility, including six inlet locations, Swan Island Lagoon outfalls (designated WR-030 through WR-035 by the City of Portland), and storm water

flow directions. Prior to 1968, Port drawings indicate that the six inlets and an asphalt-concrete surface were present at the Facility. Definitions of storm system features are presented following the table of contents of this Work Plan.

All of the inlets that capture storm water from OU3 are located on the Facility and most of the runoff from the paved areas flows to one of the six storm water inlets. Runoff from the driveways and paved areas on the western portion of the Facility may discharge as sheet flow to catch basins along N. Lagoon Avenue (with the exception of the northwestern portion of the Facility where the topography suggests that all sheet flow moves toward the Swan Island Lagoon).

The Port surveyed the paved portions of OU3, and field-verified the number and location of each of the storm water inlets in early 2008. The inlets consist of a grated, rectangular concrete sump with an outlet at the bottom (Photograph 2) connected to a 10-inch corrugated metal pipe that discharges to the Swan Island Lagoon (Photograph 3). There are no other outfalls from the property other than the building roof drains, which are connected to a storm sewer that runs along N. Lagoon Avenue.

2.3 Storm Water Permits and Best Management Practices (BMPs)

Storm water discharges from the Facility are permitted under the Port's National Pollution Discharge Elimination System (NPDES) DEQ Municipal Separate Storm Sewer System (MS4) Discharge Permit No. 101314.

2.3.1 Freightliner Storm Water Pollution Controls and BMPs

Freightliner maintains a Spill Prevention Control and Countermeasure (SPCC) Plan for the Facility. The objectives of the SPCC are to prevent spills from occurring, prepare for possible spills, and respond if a spill does occur. The SPCC Plan indicates the presence of the following ASTs (Daimler, 2008; Photographs 4 and 5):

- 250 gallons of used engine coolant (rectangular double-walled);
- 250 gallons of used motor oil (rectangular double-walled); and
- Various 55-gallon drums (new motor oil, engine coolant, washer fluid, etc.) on mobile spill pans.

All vehicle fueling is performed off-site.

As part of their SPCC plan, Freightliner maintains a linear absorbent boom that is installed along the 0.3-acre riverbank access road adjacent to their leasehold (Photograph 1). An absorbent sock surrounds each storm water inlet (Photograph 1). The daily and weekly inspection checklists included in the SPCC plan include observations of the absorbent booms. Freightliner indicated that the boom material is replaced on an as-needed/annual basis. A spill containment kit is available in the shop area (Photograph 4) and Freightliner implements an employee awareness and training program.

The inlets on the Facility are included in the Freightliner annual maintenance program. The most recent cleanout was performed on December 21, 2007 (invoice included in Appendix B). West Coast

Marine Cleaning pumped out the storm water inlets and installed new absorbent socks around each inlet.

2.3.2 Storm Water System Maintenance

The Port completed a storm water system cleanout as part of regular maintenance on July 21, 2008. The scope and procedures of the cleanout were presented in the Port's June 30, 2008 letter to the DEQ and are described below.

Removal of Dry Solids. The grates were manually removed and the solids from each inlet were vacuumed out and placed in a labeled drum approved by the Oregon Department of Transportation (ODOT) for transporting hazardous waste. Less than 5 gallons of solids were present.

Jetting of Drain Lines. Each corrugated metal outfall pipe was cleaned per the following procedure:

- A vacuum line was attached to discharge of the outfall pipe (Photograph 6). In cases where the outfalls were below the water line, a portion of the pipe was removed to allow for connection to the vacuum line.
- A Vactor hydro-jet truck, equipped with a 1,200- to 1,500-pound-per-square-inch (psi) jet head, a 500-foot spool of hose, and a vacuum tank, was used to jet-wash the lines from the inlets to the end of the outfalls.
- The rinsate was vacuumed into the Vactor truck and taken to Cascade General for treatment.

WR-031 Inlet Video Inspection. A pipe connection to the WR-031 inlet was observed during the cleanout. A video camera survey was conducted to assess a potential connection to the inlet. The results of the video survey indicated that the line was plugged approximately 10 feet from the inlet.

Dry Solids Sampling. A representative composite sample from the dry solids (removed from the inlets) was collected in accordance with Standard Operating Procedure (SOP)-2.2 (Appendix C) and submitted for the following chemical analyses:

- Total PCBs and Aroclors by EPA Method 8082;
- Polynuclear aromatic hydrocarbons (PAHs) by EPA Method 8270C-SIM;
- Metals by EPA 6000/7000 Series Methods (including arsenic, cadmium, copper, lead, mercury, and zinc);
- Phthalates by EPA Method 8270C-SIM;
- Total petroleum hydrocarbons (TPH) as gasoline by Northwest Method NWTPH-Gx; and
- Diesel and oil-range TPH by Northwest Method NWTPH-Dx (with silica gel cleanup).

Composite Solid Sample. An 8-ounce jar of solids was obtained from the Vactor truck after allowing it to settle for at least one-half hour prior to sample collection. The solids sample was submitted for the chemical analyses noted above for the dry solids sample.

Chemical Analyses and Results. The samples were submitted to TestAmerica, Inc. in Beaverton, Oregon. Copies of the analytical laboratory reports are included in Appendix D (in CD-ROM format

due to the length of the Level III deliverable reports). Samples were analyzed on a standard turnaround time. A quality assurance review of the data was completed. No qualifiers were attached to the data as a result of our review. The laboratory analytical results are included in Tables D-1 through D-5.

Handling of Investigation-Derived Waste. Investigation-derived waste (IDW) consisted of dry solids from the storm water inlets, rinsate water from line cleaning, and personal protective equipment (PPE). The dry solids were placed in a drum, chemically profiled, and transported to the Waste Management Hillsboro Landfill in Hillsboro, Oregon. The rinsate was collected in a vacuum truck and transported to Cascade General in Portland, Oregon for treatment. PPE was discarded as solid waste.

2.4 Summary of Additional Relevant Assessment Information

2.4.1 Underground Storage Tank Removal

DEQ records indicate that a 2,000-gallon gasoline UST was decommissioned by removal in October 1987. A permit on record with the Portland Fire Bureau indicated that the UST was installed in February 1980. The approximate location of the former UST is shown on Figure 3. A subsurface investigation was completed in the vicinity of the former UST in 2004. TPH as oil was detected in one sample above the DEQ Soil Matrix Level 2 Cleanup Standard. The groundwater results were nondetect (Hahn, 2004).

2.5 Electrical Equipment

Current. One pad-mounted electrical transformer is present on-site on the southwestern exterior of the office/warehouse building (Photograph 7). The transformer is owner by Portland General Electric and labeled “non-PCB”.

Historical. As part of preparation of the Supplemental Preliminary Assessment (PA; Ash Creek, 2006) for SIUF, the Port identified a former Kaiser-era substation on the Facility (Substation M) that may have utilized electrical equipment containing PCBs. Surface soil samples were collected at the location of the former Substation M in May 2007 in accordance with a request from the DEQ. The soil samples were collected at the four corners of an approximately 30- by 30-foot square centered on the estimated location of the former substation. The samples were collected just below the asphalt-concrete/sub-base using direct-push equipment. No field indications of volatile organic compounds (VOCs) or petroleum hydrocarbons were observed in any of the borings. No TPH or PCBs were detected above the method reporting limits (MRLs) in the soil samples collected.

2.6 Historical Releases/Spills

Port records were reviewed and no historical releases or spills were identified. The Supplemental PA prepared for SIUF (including OU3) concluded that no potential areas of concern (other than the former Kaiser-era substation discussion in Section 2.5) were identified for OU3.

3. Proposed Storm Water Sampling and Analysis

Current and historical Facility operations do not reveal an ongoing source of contaminants available for transport via storm water to the Swan Island Lagoon. The Port has taken and continues to take steps to prevent possible sources of storm water loading to the Swan Island Lagoon (i.e., BMPs); however, a Storm Water Source Control Evaluation is warranted to confirm that storm water from the Facility is not a current source to Swan Island Lagoon. This section presents the approach, scope, and frequency of the sampling and analysis program.

The storm water sampling program will commence upon DEQ approval of this Work Plan.

3.1 Storm Water Evaluation

Section 2.2 described the storm drain system and drainage basins as they currently exist, and discussed the nature of the Facility operations. The review of current Facility operations did not indicate operational activities with a significant potential to adversely impact the Swan Island Lagoon.

3.2 Contaminants of Interest

The COIs selected for the sampling program are consistent with those requested by the DEQ for sampling activities conducted for other media at the SIUF including: TPH, PCBs, metals, and phthalates. These COI are consistent with chemicals detected in the samples collected from the storm water cleanout.

3.3 Proposed Sampling

Whole-water grab samples from both WR-032 and WR-034 (Figure 3) will be collected consistent with Joint Source Control Strategy (JSCS) protocols and analytical results will be screened against JSCS screening level values (SLVs; DEQ/EPA, December 2005). These sample locations were selected to capture storm water runoff (1) in closest proximity to the Freightliner operations (WR-034) and (2) in an area outside Facility operations (WR-031). The outlet at the bottom of each storm water inlet is connected to a 10-inch corrugated metal pipe that discharges to the Swan Island Lagoon (Photograph 2). The metal outfall pipes are located on a steep riverbank and the outlets are commonly submerged (Photograph 8) except during low-water months. Consequently, the discharge from the storm water inlets will be temporarily blocked so that grab samples can be collected using a remote surface water sampler (consistent with the JSCS guidance) in accordance with SOP-2.12 (Appendix C).

Sampling Frequency and Storm Event Selection Criteria. Four representative storm events will be sampled: A storm event will be considered representative consistent with the Storm Event Criteria and Selection outlined in the JSCS (DEQ/EPA, 2005), as follows:

1. Each sampling event will be preceded by an antecedent dry period of at least 24 hours (as defined by less than 0.1 inch over the previous 24 hours);

2. Minimum predicted rainfall volume of greater than 0.2 inch per event; and
3. Expected storm event duration of at least 3 hours.

3.4 Laboratory Analysis

The proposed analytical program was developed based on the COI identified in Section 3.2 and is summarized below for the Facility.

- Total PCBs and Aroclors by EPA Method 8082;
- PAHs by EPA Method 8270C-SIM;
- Metals by EPA 6000/7000 Series Methods (including arsenic, cadmium, copper, lead, mercury, and zinc);
- Phthalates by EPA Method 525.5;
- TPH as gasoline by Northwest Method NWTPH-Gx; and
- Diesel and oil-range TPH by Northwest Method NWTPH-Dx (with silica gel cleanup).

Both filtered and non-filtered samples will be collected. The lowest practicably obtainable MRLs will be requested from the analytical laboratory. The samples will also be analyzed for Total Suspended Solids (TSS) per the DEQ's request.

3.5 Other Observations

Shoreline Monitoring. Because of the limited inflows and essentially no current, the lagoon acts as a collection point for floating debris and sheen. A sheen on the Swan Island Lagoon was observed adjacent to the Facility during a Port/DEQ site visit conducted in November 2007. As discussed in the Port's June 30, 2008 letter to the DEQ, there was no indication that the sheen originated at the Facility; nor was it confirmed that the sheen was of hydrocarbon origin. It is more likely that the sheen was due to releases from ship traffic, other more significant storm water discharges, or the presence of naturally occurring organics in Swan Island Lagoon. A minor sheen was observed on the water at the southern end of the Facility during a Port/DEQ site visit conducted on October 1, 2008 (Photograph 9). The sheen was floating offshore adjacent to other debris that had accumulated in the lagoon below the Ordinary Line of High Water (OLHW). It was not discernable whether the sheen was related to naturally occurring organics or the presence of hydrocarbons.

Monthly monitoring of the shoreline will be conducted (during the period of storm water sampling) to assess for potential sheen associated with the Facility. Photographs will be taken as part of the field documentation. If a sheen that is associated with the Facility is observed, the DEQ will be immediately notified and the monitoring frequency will be increased to weekly.

3.6 Schedule

The sampling program will be initiated upon approval of this Work Plan.

4. Reporting

Reporting for the Storm Water Characterization Program will consist of a Data Summary Report that will include:

- A discussion of the methods and procedures used;
- A summary of storm water event data and conformance with storm event criteria;
- A tabular summary of the analytical results and JSCS screening; and
- Analytical laboratory reports and a quality assurance review.

The data (both as discrete samples and statistical average) will be screened using the relevant JSCS screening levels.

5. References

Ash Creek Associates, Inc., 2006. Supplemental Preliminary Assessment, Swan Island Upland Facility. Prepared for the Port of Portland, December 2006.

DEQ/EPA, 2005. Portland Harbor Joint Source Control Strategy – Final (Table 3-1 Updated July 16, 2007). December 2005.

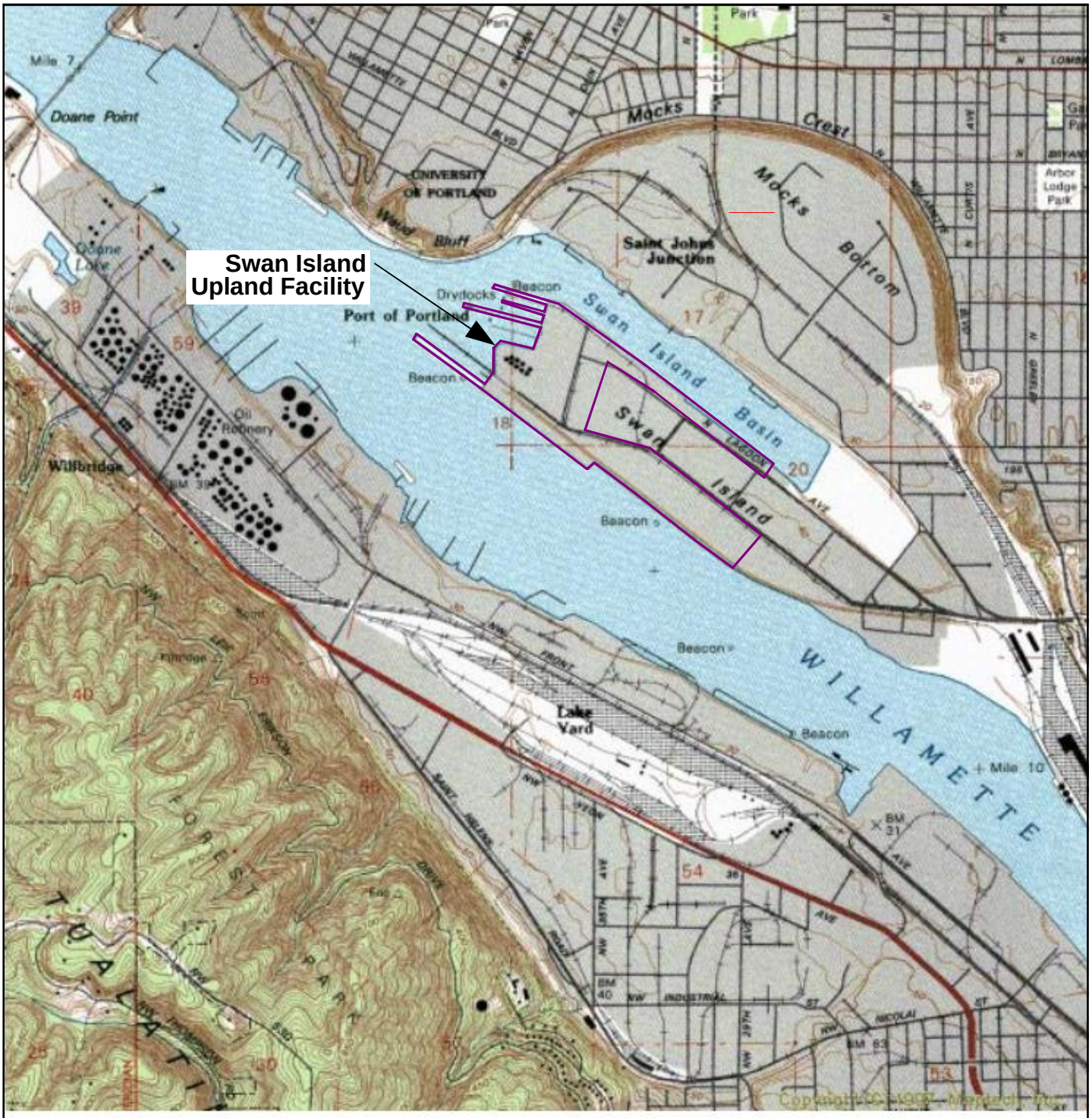
Daimler, 2008. Daimler Truck North America Reliability Development Center Spill Prevention Control and Countermeasure Plan. August, 2008.

Hahn, 2002. Phase I Environmental Site Assessment, Former Foss Environmental Facility, 5420 N. Lagoon Avenue, Portland, Oregon. April 19, 2002.

Hahn, 2004. Phase II Environmental Site Assessment Report, 5420 N. Lagoon Avenue, Portland, Oregon. March 4, 2004.

U.S. EPA, 1983a. Inspection Report, Crosby and Overton, Inc., 5420 N. Lagoon, Portland, Oregon. April 21, 1983.

U.S. EPA, 1983b. Letter to Crosby and Overton. May 25, 1983.



Base map prepared from USGS 7.5-minute quadrangles as provided by Topozone. (1990)

0 2000 4000

Scale in Feet

N

Site Location Map

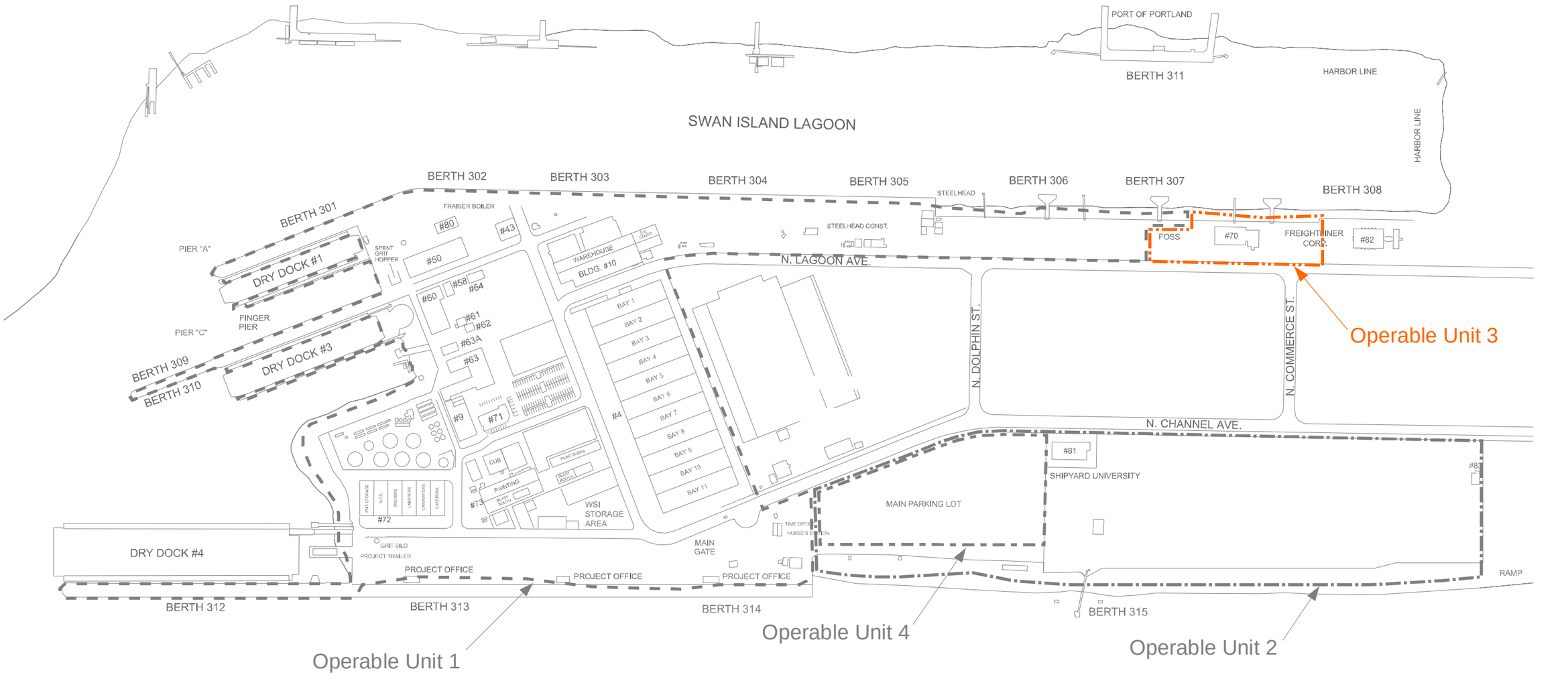
Ou3 Storm Water Evaluation Work Plan
Swan Island Upland Facility
Portland, Oregon

Ash Creek Associates, Inc.
Environmental and Geotechnical Consultants

Project Number 1115-08

October 2008

Figure 1



Legend:

- Operable Unit 1 Boundary
- Operable Unit 2 Boundary
- Operable Unit 3 Boundary
- Operable Unit 4 Boundary

0 400 800

Scale in Feet

Site Vicinity Plan

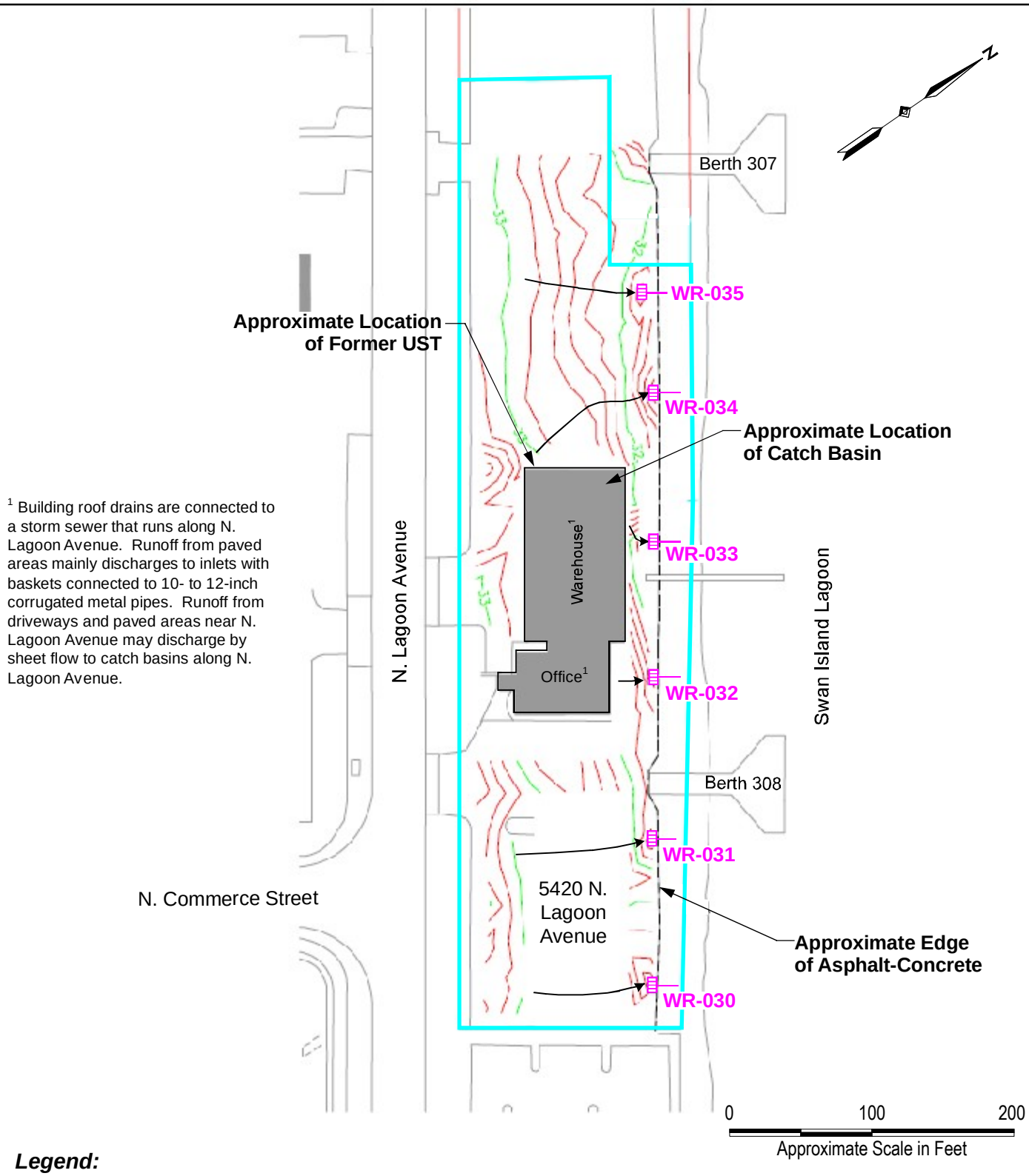
Ou3 Storm Water Evaluation Work Plan
Swan Island Upland Facility
Portland, Oregon

Ash Creek Associates, Inc.
Environmental and Geotechnical Consultants

Project Number 1115-08

October 2008

Figure 2



[1] Building roof drains are connected to a storm sewer that runs along N. Lagoon Avenue. Runoff from paved areas mainly discharges to inlets with baskets connected to 10- to 12-inch corrugated metal pipes. Runoff from driveways and paved areas near N. Lagoon Avenue may discharge by sheet flow to catch basins along N. Lagoon Avenue.

Legend:

- Operable Unit 3 Boundary
- WR-030 Inlet and Outfall Pipe and Number
- Approximate Storm Water Flow Direction

NOTE: Base map provided by Bridgewater Group, Inc.

Storm Water Drainage Plan

Ou3 Storm Water Evaluation Work Plan
Swan Island Upland Facility
Portland, Oregon

Ash Creek Associates, Inc.
Environmental and Geotechnical Consultants

Project Number	1115-08	Figure
October 2008		3

Appendix A

Photograph Log

Appendix A
PHOTOGRAPH LOG

Project Name: SIUF – OU3
Project Number: 1115-08

Client: Port of Portland
Location: Portland, Oregon

Photo No: 1	
Photo Date: July 21, 2008	
Orientation: Southwest	
Description: Absorbent booms installed around storm water inlets and along riverbank.	
Photo No: 2	
Photo Date: July 21, 2008	
Orientation: Not Applicable	
Description: Storm water inlet with discharge at bottom.	

Appendix A
PHOTOGRAPH LOG

Project Name: SIUF – OU3
Project Number: 1115-08

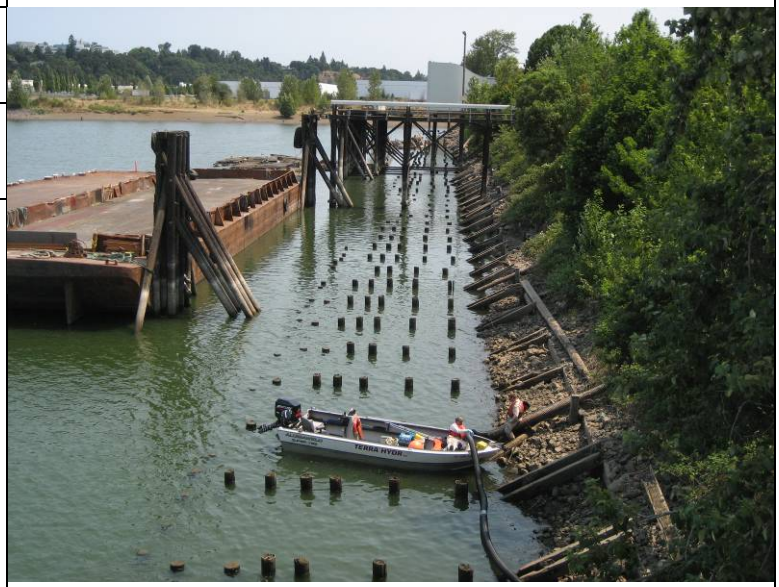
Client: Port of Portland
Location: Portland, Oregon

Photo No: 3	
Photo Date: October 1, 2008	
Orientation: Southwest	
Description: Outfall WR-035 at low-water stage.	
Photo No: 4	
Photo Date: September 22, 2008	
Orientation: Southwest	
Description: Used oil and engine coolant above-ground storage tanks (ASTs). Spill kit in right of photo.	

Appendix A
PHOTOGRAPH LOG

Project Name: SIUF – OU3
Project Number: 1115-08

Client: Port of Portland
Location: Portland, Oregon

Photo No: 5	
Photo Date: September 22, 2008	
Orientation: Southeast	
Description: Various drums on mobile spill platforms.	
Photo No: 6	
Photo Date: July 21, 2008	
Orientation: Southeast	
Description: Cleanout of the outfall pipes conducted by boat from the Swan Island Lagoon.	

Appendix A
PHOTOGRAPH LOG

Project Name: SIUF – OU3
Project Number: 1115-08

Client: Port of Portland
Location: Portland, Oregon

Photo No: 7	
Photo Date: September 22, 2008	
Orientation: South	
Description: Non-PCB transformer present on the Facility.	
Photo No: 8	
Photo Date: June 10, 2008	
Orientation: Southeast	
Description: Storm water outfall submerged in Sawn Island Lagoon.	

Appendix A
PHOTOGRAPH LOG

Project Name: SIUF – OU3
Project Number: 1115-08

Client: Port of Portland
Location: Portland, Oregon

Photo No: 9	
Photo Date: October 1, 2008	
Orientation: Northeast	
Description: Floating debris and sheen observed on surface water at the southern end of the Facility.	

Appendix B

Supporting Documentation

STATE OF OREGON

DEPARTMENT OF ENVIRONMENTAL QUALITY

INTEROFFICE MEMO

TO: Rich Reiter

DATE: February 5, 1980

FROM: Fred Bromfeld FB

SUBJECT: Abandoned Site Survey: Crosby and Overton

The following is in response to your memo of December 24, 1979, Item No. 33. The question asked is what disposal methods and locations have Crosby and Overton used, or do use, for the hazardous waste they haul.

I toured the Crosby and Overton facility (5420 North Lagoon Avenue, Portland, Oregon 97217, telephone 283-1150) on January 24, 1980. Crosby and Overton had just moved in earlier this month from another location down the road. There were no bulk storage tanks at the new site and Ken Olson, our tour guide, said that they had not, nor did they intend to store waste onsite. However, they did lease two storage tanks at Time Oil.

Their main job is cleanup and disposal for others, and they haul the wastes directly to a recycle facility, to Arlington, or to St. Johns Landfill, as appropriate. This appears to be confirmed by the Chem-Nuclear records where Crosby and Overton shows up as the hauler for such companies as Freightliner, Pacific Resin, J. H. Baxter, GATX Terminals, Myers Drum, Crown Zellerbach, etc. This being the case, we would generally consider Crosby and Overton to be the hauler, rather than the generator, and have the responsibility for hauling hazardous wastes to the site selected by the generator.

This was confirmed the following day in a phone conversation with Darmond Moore. Mr. Moore added that the storage tanks at Time Oil (approximately 150,000 gallons each) were used for the temporary storage of bilge water (oil-water mixture) from tugs and tankers. They are used as a convenience with all the material taken to Chempro or Arrcom, Woodland, Washington, when they have trucks free.

FB:be
HB2029

West Coast Marine Cleaning
INCORPORATED

Marine & Industrial Cleaning
Physical: 3501 Thompson Ave. • Vancouver, WA 98660
Mailing: P.O. Box 61944 • Vancouver, WA 98666-1944
(503) 285-2485 • (360) 696-3362 • Toll Free 877-WCMCINC • Fax (360) 696-3385

SOLD TO: Freightliner
Attn: AL Foltz
4555 N Channel Avenue
Portland, OR 97208

DATE: 12/10/07

INVOICE # ORV-17020

JOB NAME: Catch Basins

Purchase Order #	WORK ORDER NO.	SUPERVISOR	JOB LOCATION	DATE STARTED	DATE COMPLETED
Corporate Basins	ORV-17020	J. McAtee	Portland, OR	12/8/07	12/8/07

DESCRIPTION OF SERVICES			RATE PER HOUR	EXTENDED PRICE
Provide necessary labor and equipment to clean storm water catch basins and transport material to Oil Re-Refining for recycling.				
12/8/07 0700 to 1800 Saturday				
1 CDL Operator	11.00 Hrs R/T	@		
1 CDL Operator	11.00 Hrs P/T	@		
2 Laborers	22.00 Hrs R/T	@		
2 Laborers	22.00 Hrs P/T	@		
1 Wet Vac Con	11.00 Hrs	@		
1 Gear Truck	1 Day	@		
78 Catch Basin Socks	Per Each	@		
1 Disposal Oily Solids	1000 Gallons	@		

Please Remit To:
WCMC, Inc. PO Box 61944 Vancouver, WA 98666-1944

Terms: PAYMENT TERMS, COLLECTION COST, AND CONSENT TO JURISDICTION.
Services are performed with the understanding that payment is due upon completion with submitted invoice. Any amount not paid within that time is subject to a service charge of 1.5% per month or the maximum rate permitted by law, which ever is less. Buyer will pay such costs, collection agency commissions, expenses and reasonable attorney fees (including at trial and on appeal) as West Coast Marine Cleaning, Inc. or its assignee may incur in any manner of collection of amounts past due. Washington State law, without resort to its choice of law provisions, will govern to the extent it does not conflict with federal maritime law. Buyer consents to jurisdiction of and venue in any state or federal court located in Clark County, Washington or Multnomah County, Oregon.

Washington Contractor # WESTCMC038QQ

Oregon Contractor # 141916

TOTAL INVOICE:

RECEIVING RECORD

ORRCO Oil Re-Refining Company

Head Office
4150 N. Suttle Rd.
Portland, OR 97217
1-800-367-8894

R **01-07-1208-004**

Received From:
West Coast Marine
3501 Thompson Ave
Vancouver WA 98660
EPA# -0-
Phone: 503-285-2485
Customer ID# ***7662***
Driver: john

Receiving Location: Plant #
FPI
4150 N. Suttle Road
Portland, OR 97217

Phone 503-286-8352
EPA# ORD980975692

Date	Terms	Written By	Sales Rep.	Page
12/08/07	-0-	Chris	Rick	*1* of *1*

Line	Qty.	Unit	Item	%H20	Manifest #	B/L#	Net Qty
1	*1000*	*Gal.*	*Oily Solids*	*0 %*			
			Generator ID# 5027 Freightliner Corp profile on file				
			Total Gal. 1000.				

Customer warrents that the waste petroleum products being received do not contain any contaminants including, without limitation, pesticides, chlorinated solvents at total concentrations greater than 1000 PPM, PCB's greater than 2 PPM, or any other material classified as hazardous waste by 40 CFR part 261, Subparts C and D (implementing the Federal Resource Conservation and Recovery Act) or by any other state or local hazardous waste classification program. Should Laboratory tests find this product not in compliance with 40 CFR part 261 customer agrees to pay all disposal costs incurred.

Signed X _____ DATE: 12/08/07

ENVIRONMENTAL PAPER & PRINT (503) 257-9771

Appendix C

Standard Operating Procedures

1. PURPOSE AND SCOPE

This Standard Operating Procedure (SOP) describes the methods used for obtaining surface soil samples for physical and/or chemical analysis. For purposes of this SOP, surface soil (including shallow subsurface soil) is loosely defined as soil that is present within 3 feet of the ground surface at the time of sampling. Various types of sampling equipment are used to collect surface soil samples including spoons, scoops, trowels, shovels, and hand augers.

2. EQUIPMENT AND MATERIALS

The following materials are necessary for this procedure:

- Spoons, scoops, trowels, shovels, and/or hand augers. Stainless steel is preferred.
- Stainless steel bowls
- Laboratory-supplied sample containers
- Field documentation materials
- Decontamination materials
- Personal protective equipment (as required by Health and Safety Plan)

3. METHODOLOGY

Project-specific requirements will generally dictate the preferred type of sampling equipment used at a particular site. The following parameters should be considered: sampling depth, soil density, soil moisture, use of analyses (e.g., chemical versus physical testing), type of analyses (e.g., volatile versus non-volatile). Analytical testing requirements will indicate sample volume requirements that also will influence the selection of the appropriate type of sampling tool. The project sampling plan should define the specific requirements for collection of surface soil samples at a particular site.

Collection of Samples

- Volatile Analyses. Surface soil sampling for volatile organics analysis (VOA) is different than other routine physical or chemical testing because of the potential loss of volatiles during sampling. To limit volatile loss, the soil sample must be obtained as quickly and as directly as possible. If a VOA sample is to collected as part of a multiple analyte sample, the VOA sample portion will be obtained first. The VOA sample should be obtained from a discrete portion of the entire collected sample and should not be composited or homogenized. Sample bottles should be filled to capacity, with no headspace. Specific procedures for collecting VOA samples using the EPA Method 5035 are discussed in SOP 2-7.
- Other Analyses. Once the targeted sample interval has been collected, the soil sample will be thoroughly homogenized in a stainless steel bowl prior to bottling. Sample homogenizing is accomplished by manually mixing the entire soil sample in the stainless steel bowl with the sampling tool or with a clean teaspoon or spatula until a uniform mixture is achieved. If packing of the samples into the bottles is necessary, a clean stainless steel teaspoon or spatula may be used.

General Sampling Procedure:

- Decontaminate sampling equipment in accordance with the Sampling and Analysis Plan (SAP) before and after each individual soil sample.
- Remove surface debris that blocks access to the actual soil surface or loosen dense surface soils, such as those encountered in heavy traffic areas. If sampling equipment is used to remove surface debris,

the equipment should be decontaminated prior to sampling to reduce the potential for sample interferences.

- When using a hand auger, push and rotate downward until the auger becomes filled with soil. Usually a 6- to 12-inch long core of soil is obtained each time the auger is inserted. Once filled, remove the auger from the ground and empty into a stainless steel bowl. If a VOA sample is required, the sample should be taken directly from the auger using a teaspoon or spatula and/or directly filling the sample container from the auger. Repeat the augering process until the desired sample interval has been augered and placed into the stainless steel bowl.

Backfilling Sample Locations:

Backfill in accordance with federal and state regulations including OAR 690-240 (e.g., bentonite requirements). The soils from the excavation will be used as backfill unless project-specific or state requirements include the use of clean backfill material.

STANDARD OPERATING PROCEDURE	SOP Number:	2.12
	Date:	June 10, 2008
OUTFALL GRAB WATER SAMPLING PROCEDURES	Revision Number:	0
	Page:	1 of 1

1. PURPOSE AND SCOPE

This Standard Operating Procedure (SOP) describes the methods used for obtaining grab-type water samples from storm drains, outfalls, or flumes for physical and/or chemical analysis. For a grab sample a discrete aliquot is collected representing a specific location at a given time. This SOP does not include collection of samples with an automated sampler. Various types of methods are used to collect grab water samples including peristaltic pumps, telescoping samplers, or directly filling laboratory-supplied sample containers. This procedure is applicable during all Ash Creek Associates (ACA) outfall water sampling activities.

2. EQUIPMENT AND MATERIALS

The following materials are necessary for this procedure:

- Telescoping swing sampler; peristaltic pump and tubing.
- Laboratory-supplied sample containers
- Field documentation materials
- Decontamination materials
- Personal protective equipment (as required by Health and Safety Plan)

3. METHODOLOGY

Project-specific requirements will generally dictate the preferred type of sampling equipment used at a particular site. The following parameters should be considered: accessibility of sampling point, sampling depth, and flow rate. Analytical testing requirements will indicate sample volume requirements that also will influence the selection of the appropriate type of sampling method. The project sampling plan should define the specific requirements for collection of outfall water samples at a particular site.

Collection of Samples

- Record weather conditions at the time of sampling and last known rain fall event(s). Record the location and sketch the configuration of the outfall.
- The water sample can be collected directly by dipping the collection bottle into the water (just beneath the water surface) and filling, removing, and capping it. Preservative should be added to sample containers after collection (where necessary). Be careful not to touch the sides of the vault, manhole, or outfall pipe. Rinse the outside of the sample container after collection.
- A telescoping swing sampler can be used if an extension is necessary to access the sample point. Attach a new laboratory supplied sample container to the sampler or use a decontaminated transfer device constructed of polyethylene, Teflon, stainless steel, or glass. The transfer device is used to transfer liquid from the sampling point to a sample bottle. Avoid using metal transfer devices for trace-metal analysis or plastic devices for sampling trace organics.
- A peristaltic pump with disposable tubing can be used to collect a water sample from a manhole. The downhole tubing can be attached to a telescoping sampling pole to provide better control. Lower the tubing downstream of any standing water and take care to avoid stirring up the sediment.
- If required by the project sampling plan, collect an aliquot of water for measuring water quality parameters (e.g., temperature, dissolved oxygen, pH, turbidity, and specific conductance). Water quality parameters should be collected immediately after the sample is collected.

Appendix D

Storm Water System Cleanout Data

Table D-1
Sediment Analytical Results: Metals
SIUF - OU3
Portland, Oregon

Sample	Date Sampled	Arsenic	Cadmium	Copper	Lead	Mercury	Zinc
		Concentration in mg/kg (ppm)					
SIUF-Inlet	7/22/2008	33.1	1.81	390	523	1.79	541
SIUF-Lines	7/22/2008	5.86	1.36	196	316	2.83	6
Screening Level Value		7.0	1.0	17	0.07	459	459

Notes:

1. Metals analysis by EPA 6000/7000 Series Methods.
2. mg/kg (ppm) = Milligrams per kilogram (parts per million).
3. Screening levels from Portland Harbor Joint Source Control Strategy Table 3-1: Screening Level Values for Soil/Storm Water Sediment, Storm Water, Groundwater, and Surface Water (7/16/07 Revision).
4. Shading indicates that the reported concentration exceeds the screening level.

Table D-2
Sediment Analytical Results: Total Petroleum Hydrocarbons
SIUF - OU3
Portland, Oregon

Sample	Date Sampled	TPHg mg/kg (ppm)	TPHd mg/kg (ppm)	TPHo mg/kg (ppm)
SIUF-Inlet	7/22/2008	<4.81	<761	1,590
SIUF-Lines	7/22/2008	<8.01	6,810	59,600

Notes:
1. TPHg = Gasoline-range Total Petroleum Hydrocarbons by Northwest Method NWTPH-Gx.
2. TPHd = Diesel-range Total Petroleum Hydrocarbons by Northwest Method NWTPH-Dx (with silica gel cleanup).
3. TPHo = Oil-range Total Petroleum Hydrocarbons by Northwest Method NWTPH-Dx (with silica gel cleanup).
4. mg/kg (ppm) = Milligrams per kilogram (parts per million).
5. < = Not detected above the Method Reporting Limit (MRL).

Table D-3
Sediment Analytical Results: Phthalates
SIUF - OU3
Portland, Oregon

Sample	Date Sampled	Di-n-octyl Phthalate	Dimethyl Phthalate	Diethyl Phthalate	Di-n-butyl Phthalate	Benzyl Butyl Phthalate	Bis(2-ethylhexyl) Phthalate
		Concentrations in μg/kg (ppb)					
SIUF-Inlet	7/22/2008	<1,670	<1,670	<1,670	<1,670	<1,670	2,830
SIUF-Lines	7/22/2008	<14,600	<14,600	<14,600	<14,600	<14,600	21,800
Screening Level Value		--	--	600	60	--	330

Notes:
1. Phthalates by U.S. Environmental Protection Agency (EPA) Method 8270-SIM.
2. μg/kg (ppb) = Micrograms per kilogram (parts per billion).
3. Screening levels from Portland Harbor Joint Source Control Strategy Table 3-1: Screening Level Values for Soil/Storm Water Sediment, Storm Water, Groundwater, and Surface Water (7/16/07 Revision).
4. -- = Not available.
5. < = Not detected above the Method Reporting Limit (MRL).
6. Shading indicates that the reported concentration exceeds the screening level.

Table D-4
Sediment Analytical Results: Polychlorinated Biphenyl Aroclors
SIUF - OU3
Portland, Oregon

Sample	Date Sampled	Aroclor 1016	Aroclor 1221	Aroclor 1232	Aroclor 1242	Aroclor 1248	Aroclor 1254	Aroclor 1260	Aroclor 1262	Aroclor 1268	Total PCBs
		Concentrations in µg/kg (ppb)									
SIUF-Inlet	7/22/2008	<179	<179	<179	<179	<179	<179	499	<179	<179	
SIUF-Lines	7/22/2008	<260	<260	<260	<260	<260	<260	1,490	<260	<260	
Screening Level Value		530	--	--	--	1,500	300	200	--	--	0.39

Notes:

1. Polychlorinated Biphenyl (PCB) Aroclors by U.S. Environmental Protection Agency (EPA) Method 8082.
2. µg/kg (ppb) = Micrograms per kilogram (parts per billion).
3. Screening levels from Portland Harbor Joint Source Control Strategy Table 3-1: Screening Level Values for Soil/Storm Water Sediment, Storm Water, Groundwater, and Surface Water (7/16/07 Revision).
4. -- = Not available.
5. < = Not detected above the Method Reporting Limit (MRL).
6. Shading indicates that the reported concentration exceeds the screening level.

Table D-5
Sediment Analytical Results: Polynuclear Aromatic Hydrocarbons
SIUF - OU3
Portland, Oregon

Sample	Date Sampled	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene
		Concentrations in µg/kg (ppb)							
SIUF-Inlet	7/22/2008	<416	<416	<416	<416	<416	<416	<416	<416
SIUF-Lines	7/22/2008	<1,460	<1,460	<1,460	2,490	1,810	3,190	1,880	<1,460
Screening Level Value		300	200	845	1,050	1,450	--	300	13,000

Sample	Date Sampled	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	Naphthalene	Phenanthrene	Pyrene
		Concentrations in µg/kg (ppb)							
SIUF-Inlet	7/22/2008	425	<416	513	<416	<416	<416	<416	431
SIUF-Lines	7/22/2008	11,000	<1,460	4,160	<1,460	<1,460	<1,460	1,790	5,000
Screening Level Value		1,290	1,300	2,230	536	100	561	1,170	1,520

Notes:

1. Polynuclear Aromatic Hydrocarbons (PAHs) by U.S. Environmental Protection Agency (EPA) Method 8270 C SIM.
2. µg/kg (ppb) = Micrograms per kilogram (parts per billion).
3. Screening levels from Portland Harbor Joint Source Control Strategy Table 3-1: Screening Level Values for Soil/Storm Water Sediment, Storm Water, Groundwater, and Surface Water (7/16/07 Revision).
4. -- = Not available.
5. < = Not detected above the Method Reporting Limit (MRL).
6. Shading indicates that the reported concentration exceeds the screening level.